1-1-1974

The effect of cognitive set and attribution on sources of behavioral variance as measured by the S-R inventory of anxiousness.

Donald Alan Liebman
University of Massachusetts Amherst

THE EFFECT OF COGNITIVE SET AND ATTRIBUTION ON
SOURCES OF BEHAVIORAL VARIANCE
AS MEASURED BY THE S-R INVENTORY OF ANXIOUSNESS

THE EFFECT OF COGNITIVE SET AND ATTRIBUTION ON SOURCES OF BEHAVIORAL VARIANCE AS MEASURED BY THE S-R INVENTORY OF ANXIOUSNESS

A Dissertation

By

Donald Alan Liebman

Submitted to the Graduate School of the University of Massachusetts in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

March 1974

Psychology

THE EFFECT OF COGNITIVE SET AND ATTRIBUTION ON
SOURCES OF BEHAVIORAL VARIANCE
AS MEASURED BY THE S-R INVENTORY OF ANXIOUSNESS

A Dissertation

By

Donald Alan Liebman

Approved as to style and content by:

Harold Raush, Chairman of Committee

Harold James, Member

Erwin Staub, Member

Richard Kattis, Chairman
Department of Psychology

March 1974

ACKNOWLEDGEMENTS

The author would like to express his deep appreciation of the kindness, guidance and tolerance shown by Drs. Harold Raush, Harold Jarmon and Erwin Staub over this lengthy process. I would also like to thank my wife, Kathie, who was the true fountainhead of my learning. Without the additional support and technical assistance of my friends Jeff, Cindy and Linda, this manuscript would never have been completed. To you all, I am indebted.

The Effect of Cognitive Set and Attribution on Sources of Behavioral Variance as Measured by the S-R Inventory Of Anxiousness

(March 1974)

Donald Alan Liebman, B.A., Pennsylvania State University

M.S., University of Massachusetts

Directed by: Harold Raush Ph.D.

The S-R Inventory of Anxiousness is a paper and pencil instrument which permits an examination of the relative sources of behavioral variance attributable to persons, settings, modes of response and their interactions. One hundred and sixtv college students were randomly divided into four groups and administered the S-R Inventory of Anxiousness. Each of the four groups received a different instructional set. The four instructional sets included the standard Hunt and Endler instructions and three other sets each of which was designed to accentuate the variance contribution of a particular source((1)persons, (2) settings, (3) persons x settings interaction). The subjects were additionally asked to complete the S-R Inventory as their best friend would to evaluate the use of trait constructs in regards to the rating or description of others. The findings which generally replicated the results of Hunt and Endler, indicated that (a) instructional set was ineffective as a means of influencing the relative contributionsof each of the component sources of variation, (b) attribution to another as opposed to self ratings produced differences in the proportions of variance attributable to a given component source. The substantive, theoretical and methodological implications of the findings were discussed

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

In recent years there has been increasing interest in obtaining empirical evidence to clarify what constitutes the major sources of variance in behavior. This concern has been prompted by many psychologists' ongoing discussions of two related issues: first, the individual differences--situations question and second, the generality-specificity argument.

In regard to the former, there has been historical disagreement in approach between individual differences theorists and social psychologists about the relative importance of individual differences and of situations in predicting how people will behave (Endler, Hunt, and Rosenstein, 1962). Most personality theorists, while attributing importance to situations as an influence upon behavior, have functioned within their research roles as if individual differences were the major determinants of behavior. As a result, most personality research has been concerned with the measurement of individual responses and the development of trait or state theories regarding these responses. However, many social psychologists have contended that the major factor influencing variation in behavior is the situation in which individuals respond (Dewey and Humber, 1951). Specifically, behavioral variation is seen as a function of the cultural rules and social roles derived from a situation's meaning for an individual.

Secondly, the concern for empirical evidence regarding sources of behavioral variation has been fostered by the controversial con-

clusions drawn by some psychologists regarding the generality-specificity question--that is, the issue of an individual's behavioral consistency across a number of distinct situations (Mischel, 1968). Recently, literature reviews (Vernon, 1964; Hunt, 1965; Mischel, 1968, 1973) have called into question the long-held belief that individuals possess strong, stable traits across situations. Mischel (1968, p. 146) summarizes the attack on the trait concept by saying:

> With the possible exception of intelligence, highly generalized behavioral consistencies have not been demonstrated and the concept of personality traits as broad response predispositions is thus untenable. . . Many of the response consistencies obtained across measures turn out to be due to the commonality of the test stimuli or methods used to elicit the responses and to other sources, like response sets that undermine the interpretation of data as indicators of personality traits.

These two areas of discussion converge in the research efforts to partition variance into its component sources for comparison of their relative proportions of the total variance. These research approaches provide the most directly relevant data concerning the situational specificity versus the trans-situational generality of personality (Alker, 1972). Three separate lines of research have dealt with this issue, and constitute a rather limited amount of investigation considering the implications of this area for personality psychology.

Initial efforts in this area began with observational studies by Raush and his associates. A longitudinal series of studies

(Raush, Dittman, and Taylor, 1959a, 1959b; Raush, Farbman, and Llewelyn, 1960) looked at the interpersonal behaviors of a small group of hyperaggressive preadolescent children in residential treatment. The research concerned itself with changes in the boys' social behavior towards both peers and adults over the period of a year and a half. A matched control group of normal boys was also studied along the same dimensions as the experimental group. Two observations were made on each child in each of six life settings (e.g., breakfast, structured game activities, arts and crafts, etc.). Observations were made at the beginning of the program and repeated after a year and one half of treatment on two dimensions: affectional (friendly vs. hostile) and status (dominant vs. submissive) behavior.

The results suggested to Raush and his associates that the question of whether or not individual personality or the situation is more important in determining behavior is a meaningless one. They conclude "there is individual consistency in social behaviors across different settings and there is setting consistency across different individuals. But the interactive effects between the child and setting contributed far more information about behavior than did the sum of the independent components." (Raush et al, 1959, p. 375).

These findings point towards a need for adequate classification (or sampling) of both personality and setting dimensions to help in

understanding such interactive effects (Raush et al, 1959; Moos, 1973). Raush's conclusions suggested strongly the need for direct empirical study of the sources of behavioral variance and their interactions.

In a series of studies designed to address the issue of the relative importance of individual differences and of situations upon behavior by a direct comparison of the relative sizes of the contributions to the total variance from persons and situations, Endler, Hunt, and their colleagues (Endler, Hunt, Rosenstein, 1962; Endler and Hunt, 1966; Endler and Hunt, 1968a, 1968b; Endler and Hunt, 1969) have developed an innovative self-report instrument called the S-R Inventory of Anxiousness. This paper-and-pencil inventory is distinctive because it separates explicitly described stimulus situations from the individual's mode of response (which are considered behavioral indicators of the trait "anxiety"). This new format makes it possible to statistically analyze the relative size of the variance components attributable to the main effects (in this case, persons, situations and modes of responses) and their interactions, (Endler, Hunt and Rosenstein, 1962). Specifically, the inventory employs a sample of fourteen modes of response indicating anxiousness (e.g., "heart beats faster", "get an uneasy feeling", "emotions disrupt action", "perspire", etc.) in each of eleven sample situations (e.g., "you are going to meet a new date", "you are going into a psychological experiment", etc.). The subject is asked to report the degree (i.e.,

on a 1-5 scale with 5 indicating a high anxiety score) to which he experienced a specific mode of response in each of the situations.

In an attempt to assess the validity of the new instrument, Endler, Hunt and Rosenstein correlated the scores from the S-R Inventory with other instruments purporting to measure "anxiety". Results indicated that the S-R Inventory has somewhat higher (and statistically significant) correlation with the scores from the other inventories than do the scores from the other inventories with each other. They conclude that the new instrument appears to be at least as valid as other existing instruments.

The initial data analysis (Endler, Hunt and Rosenstein, 1962) indicated greater import of situational variance than subject variance for predicting behavior. This finding apparently supported social psychologists' claims regarding the importance of knowing the situation as opposed to individual differences. However, Endler and Hunt later acknowledged that an inappropriate statistical technique had produced the (misleading) results. A reanalysis of the original data (Endler and Hunt, 1966) plus an additional subject sample indicated that behavioral variation was primarily a function neither of individual differences nor of situations; rather, persons and settings differences each accounted for approximately 5-10 percent of the total behavioral variance while nearly 33 percent of the total variance came from the simple (first order) interactions. The modes of response contributed about

25 percent of the variance with the remainder being accounted for by the confounded effect of the triple interaction and the error (about 35 percent). The statistical analysis was unable to differentiate the estimates of the triple interaction from estimates of the error since such a separation is impossible with only one observation per cell. Further studies (Endler and Hunt, 1968; Silverstein and Fisher, 1968) suggested that the triple interaction accounted for between 5-10 percent of the variance with the remainder being the error term.

Thus, with a conclusion strikingly similar to Raush et al, Endler and Hunt suggest that the question of whether individual differences or situations are the major source of behavioral variance is a moot point and that, in effect, there is no single major source of behavioral variance for the trait of anxiety. Finally, the fact that the interactions of the main sources of variance and not these sources themselves accounted for the most substantial portions of the total variance was seen to have great importance for personality description and for personality theory.

First, Endler and Hunt suggest that one implication of these results might be the improvement of personality diagnosis and description by specifying the kinds of responses that persons make in various kinds of situations as well as statements about their general proneness to make certain responses rather than others. It is possible that improvement in the validity of trait assess-

ment might be considerable if attempts were made (with the purposes of assessment in mind) to categorize situations, and to categorize modes of response and then describe individuals in terms of those categories. Several investigators have found evidence to suggest that such an approach does improve the precision of description (Endler and Bain, 1967; Haywood and Dobbs, 1964).

Second, the findings help to explain the traditionally low (in the range of .2 to .25) validity coefficients for omnibus measures (e.g., Mandler and Sarason, 1962; Taylor, 1953) of anxiety (Endler, Hunt, and Rosenstein, 1962). It was suggested that validity coefficients might well be substantially raised by specifying the particular situation in which the trait response indicators are experienced and reported. Recent evidence (D'Zurilla, 1964; Hoy, 1966; Paul, 1966) indicates that where such situation specification is made, validity coefficients have increased from the traditional .25 range to between .60 and .80.

Since the evidence leading to these conclusions regarding personality description and prediction was based on a limited sampling and on a relatively untested behavior inventory, studies were conducted to test the generalizability of the results (Endler and Hunt, 1968; 1969). Their earlier research (Endler, Hunt, and Rosenstein, 1962) did not make any claim for the statistical generality of the results. Rather, the generality was to derive from the empirical reproducibility of the findings across samplings

of situations, modes of responses, and subjects as well as other traits. Their strategy involved two approaches to testing the S-R Inventory's generalizability. First, they constructed new forms of the inventory and administered it to different samples of subjects using new situations and new modes of response. The second aspect of the strategy involved extending the range of individual differences (by sampling subjects of differing age and mental health) and extending the range of situations (by varying the degree of threat from innocuous to highly threatening). The purpose of the second aspect of the strategy was to "test the limits"--i.e., to determine the limits of proportion of variance that might come from extending the range of a source component. They found indications of age trends, social class differences and sex differences in the proportions of variance from the various sources. The proportion of total variance contributed by situations was twice as large for women as for men. Increasing age produces an increase in the total variance contributed by the modes of response. Finally, upper middle class subjects had a greater percentage of total variance contributed by persons and situations than did the upper lower class. Also, the percentages of variance from modes of response had opposite results for subjects of differing socio-economic status.

However, their most significant conclusion was that in general, the proportions of the total variance were generally consistent with the earlier research. An inspection of the ranges in the

proportions of variance from the different samples showed some small instability across subjects, situations and modes of response, but not sufficient instability for them to question their earlier conclusions regarding personality.

In an attempt to extend the S-R Inventory format to another trait, (and secondly enhance the generalizability of the method) Endler and Hunt (1968) developed and tested an S-R Inventory of Hostility. They found that the consistency in the proportions of the total variance contributed by the various sources in S-R Inventory of Hostility (across samples and across alternative forms of the Inventory) was somewhat lower. In addition, the proportions of variance attributable to a particular source were not consistent across the two trait inventories. Specifically, the subject variance for the hostility inventory was between 3 to 4 times as much as the subject variance for the anxiety inventory, suggesting to them that individual differences in the intensity of a trait of hostility are greater than individual differences in the intensity of a trait of anxiety.

In a series of studies investigating the effects of psychiatric inpatient ward settings on patients and staff (Moos, 1967, 1968a,b; Moos and Daniels, 1967) the question of the relative amounts of variance accounted for by different sources of variance was addressed through a somewhat different approach. Patient and staff responses to different ward subsettings (e.g., individual therapy, group

therapy, community meetings, lunch, free time) were gathered using 5 sets of bipolar adjective pairs reflecting trust, extroversion, security, involvement, and sociability (Moos, 1967; Moos, 1968). Analysis of the data indicated that for patients, individual differences accounted for more variance than setting differences whereas for staff, individual differences accounted for less variance than setting differences. Moos also found that individual differences among patients, differences among settings and the interaction of patients and settings all account for significant and meaningful amounts of variance. Further, paralleling the results of both Raush et al and Endler et al, the interactions accounted for more of the variance than either main effect. Subsequent studies (Moos, 1968b; Moos and Daniels, 1967) replicated these conclusions while extending their generality by using somewhat different settings and response adjectives.

However, the measures employed by Moos seem less direct than those used by Endler and Hunt. Situations while labeled (e.g., the day room), are open to significant day-to-day variation in their meanings to the individuals. Also, the subjects are not describing their behavior but rather are making judgements about their feelings and behavior in the form of trait constructs (e.g., trust, etc.). The combination of a situation subject to considerable variation with a demand to make interpretations heightens the possibility of descriptive inaccuracy or artifactual consistencies (Mischel, 1968). Mischel (1972) indicates that behavioral predic-

tions from self-report data are "especially precarious" when the subjects inferences about his global characteristics are elicited rather than providing behavioral descriptions or reactions to specific stimulus situations. The possibility of such an occurrence is real in view of Moos' (1969) finding that there is much greater variation in the proportion of variance attributable to different sources of variance in actual behavior than in responses to questionnaires, especially in the proportion of variance attributable to settings. In this study, Moos collected both self-report and observational data on the ward behavior of psychiatric patients in order to assess the relative consistency of source component variance across procedures. However, Moos' results must be considered questionable since the behaviors observed might be considered trivial (e.g., foot movements, scratching, nodding, arm movements). Nonetheless, the Moos observational research is an important methodological step and more studies of this nature are necessary to clarify this issue.

STATEMENT OF PROBLEM

The evidence available from the three lines of investigation reviewed is limited in scope but rigorous and compelling. Its conclusion is inescapable: (1) Traditional personality theory has dealt with only a subset of the determinants of behavior, and that traits and states in and of themselves do not and cannot account for more than some rather small proportion of behavioral variation. (2) Further, that there is in the research reviewed at least the promise of theoretical schemes and predictive formulas involving situation, trait, and interactions which may account for major amounts of behavioral variation.

There is a tremendous need for further research in this area primarily because of the degree to which it may theoretically revolutionalize conceptionalizations of personality and behavior. The first order of business must be to increase radically the amount of research available which speaks to these points. There are also some important problems in this research area which need immediate clarification. Moos' (1969) research suggests that questionnaire and other paper-and-pencil approaches may not adequately reflect data that would be available if observational techniques or other more behavioral assessment devices were utilized. Since such research is time-consuming, expensive and subject to many practical limitations, this inference needs to be directly examined. Second, while Moos succinctly points out

the differences obtained by different methods and different researchers in this general area, there is a compelling argument that the results are, overall, remarkedly consistent. Moos (1969) has noted that the relative amounts of variance accounted for by these sources vary importantly depending upon the nature of the sample, the response indicators used the specific settings and the "trait" selected for study. Moos (1969) in discussing the results in this area concludes:

> The degree of variation in the proportions of variance accounted for by different sources of variance is clearly much greater than has been assumed heretofore. This is particularly important since the percentage of variance accounted for by consistent differences between individuals is related to the upper limit of the validity of predictions. (p. 411).

Mischel (1968) in reviewing paper-and-pencil approaches to personality research has suggested that one of the reasons for the consistently low validity coefficients for such research is that individuals verbally describe themselves in trait terms and as stable and consistent actors while a behavioral analysis would in part deny the individual's verbal self-reports. If this is an accurate hypothesis and if such self-report behavior cannot be manipulated by instructional set or by other experimental devices, then this is further grounds for mitigating the results which have been so far obtained with the S-R Inventory and for pursuing the research examining components of behavioral variance by specific and direct observation techniques.

On the other hand, if experimentally induced changes in instructional set during the rating of behavior and changes in the locus of the behaviors being rated (self attribution vs. other attribution) are effective manipulations reflected by changes in the relative percentages of behavioral variance accounted for by persons, settings, modes of response and their interactions, then the S-R Inventory and allied research methods may hold promise with situational and response diversity.

This study will investigate the following three experimental hypotheses:

Hypothesis 1: The proportions of variance attributable to the various components of a persons x settings x modes of response paradigm will be significantly influenced by cognitive (instructional) set.

Endler and Hunt (1969) employed two distinct strategies to "test the limits" of their findings. An alternative strategy involves manipulating the demand characteristics of their inventory. By starkly differentiating the instructions to the inventory (with each set of instructions emphasizing attention to a different variance source), it is possible to determine how sensitive the proportions of variance are to a cognitive (instructional) set. That is, it is plausible that the proportions of variance attributable to the various sources are a function of the demand characteristics of the inventory. Also, if such experimental

manipulations are ineffective in changing the overall variance components attributable to persons, settings and modes of response, investigators will have to consider carefully the conclusion that such percentages are a function of either the verbal habits of the subjects or the general demand characteristics of the S-R Inventory. It is not plausible that consistency of this type would suggest a parallel behavioral consistency in actual situations unless Moos' data on this issue can be convincingly rebutted.

Evidence reviewed previously suggested that variance attributable to persons, situations and response modes were a significant function of some demographic variables. It follows that persons operating in similar situations but with different habits, cultures or expectations will respond differently, and consistently so. Since manipulation of instructional set has been effective in changing behavior in many other experimental situations, this study employed instructional sets which were designed to maximize the degree to which behavior was a function of (a) persons, (b) settings, (c) the interaction of persons and settings and, as a control, the fourth instructional set was utilized which replicated the Hunt and Endler standard instructions.

Hypothesis 2: The proportions of variance accounted for various components will differ as a function of self-report versus an attribution to others.

One excellent opportunity that has not yet been considered with the S-R Inventory is to extend the ratings from "self" to the rating

of another. If the S-R Inventory is, in fact, an accurate analog of non-laboratory behavior and its results are indicative of quite general empirical relationships, then the behavioral variance components would not vary significantly as a function of the individual rated. Typically, research in attribution has involved trait ratings or adjectivial descriptions and these studies have shown an inability of the rater to describe the uniqueness of the other. Rather, the results indicated that the raters constructed generalized (and stereotypical) descriptions of the person being rated, regardless of how much information they possessed about the ratee (Mischel, 1968). Such results may reflect the inadequacy of the methods of measurement employed. The S-R Inventory with its innovative format provides an opportunity to gather new information concerning the use of trait constructs regarding ourselves and others.

Jones and Nisbett (1971) concur with Mischel's conclusion but go considerably beyond it in their research. They suggest that people explain their own behavior largely in terms of specific conditions or situations. However, people explain the actions of others largely in terms of the stable dispositions, or traits, of others. If that conclusion is valid, this research should be able to demonstrate consistent differences in percentages of variance attributable to persons and settings as a function of whether subjects are rating their own behavior or the behavior of others.

Hypothesis 3: The proportions of variance attributable to

the various components will be influenced differentially by cognitive (instructional) set as a function of self-report versus attribution to others.

The interaction of cognitive (instructional) set with self versus attributed rating of behavior allows for a comparison of differential effects of cognitive set upon such ratings. It may be assumed that a person who rates his own behavior about which he possesses a great deal of information is less likely to be influenced by a manipulation of instructions than a person who rates another's behavior (where there is less information).

METHOD

Subjects:

The Ss were a group of 160 male and female students from the introductory psychology classes at a Northern California junior college. The Ss were randomly divided into four equal groups.

Procedure:

The S-R Inventory of Anxiousness (Endler, Hunt and Rosenstein, 1962) was administered to each group. The S-R Inventory of Anxiousness, a trait inventory, employs a new format (see Appendix A) which samples separately responses, situations and individual differences.

Tape recorded instructions were played to the Ss while they read written instructions. Each of the four groups received different sets of instructions. Group 1 received the standard instructions (Hunt, Endler and Rosenstein, 1962) used in the administration of the S-R Inventory (see Appendix A). The remaining three groups each received the standard instructions modified with an emphasized insertion asking the subject to attend to specific aspects of his experience. The insertions always were placed immediately before the example in the instructions. For Group 2 the insertion read:

> "YOU KNOW THAT SITUATIONS DIFFER IN MANY ASPECTS AND THAT NO TWO SITUATIONS ARE EXACTLY ALIKE. AS YOU GO THROUGH THE INVENTORY AND CONSIDER YOUR CHOICES PLEASE THINK OF HOW THE SITUATION DETERMINES YOUR RESPONSES. REMEMBER, AS YOU ANSWER EACH ITEM, THINK ABOUT THAT PARTICULAR SITUATION".

For Group 3 the instructions read:

> "YOU KNOW THAT NO TWO PEOPLE ARE THE SAME AND THAT THERE IS NO OTHER PERSON EXACTLY LIKE YOU. AS YOU GO THROUGH THE INVENTORY AND CONSIDER YOUR CHOICES PLEASE THINK OF HOW YOUR OWN PERSONALITY DETERMINES YOUR RESPONSES. REMEMBER, AS YOU ANSWER EACH ITEM THINK ABOUT YOUR OWN PERSONALITY".

For Group 4 the instructions read:

> "YOU KNOW THAT PEOPLE ACT ONE WAY IN ONE SITUATION AND THAT THEY ACT DIFFERENT WAYS IN OTHER SITUATIONS. AS YOU GO THROUGH THE INVENTORY AND CONSIDER YOUR RESPONSES, PLEASE THINK OF HOW BOTH THE SITUATIONS AND YOUR PERSONALITY DETERMINES YOUR RESPONSES. REMEMBER, AS YOU ANSWER EACH ITEM THINK ABOUT THAT PARTICULAR SITUATION AND YOUR OWN PERSONALITY".

After completing the inventory, the Ss received a second set of instructions which reminded them of the nature of the task and asked them to take the inventory again but to complete it with "your best friend" as the person to be rated. The instructions requested that the Ss respond to the items "as you know him" and "as you imagine that he would respond". The rating of "self" and the rating of "best friend" was balanced as a safeguard against order effects. Table 1 indicates that half of the experimental Ss in each of the four conditions were presented the task of rating themselves first and then rating their "best friend" while the other half of the Ss received instructions to rate their "best friend" (Other) first and then to rate themselves.

Statistical Analysis:

The data analysis followed the procedure employed by Fiedler and Hunt (1966). The responses to the situations of the S-R Inventory were analyzed by a three-way analysis of variance assuming a random effects model. Separate analyses were conducted for

each experimental condition. The percentages of variance accounted for by each source of variance were calculated for these random effects analysis of variance models using the rationale and equations given by Gleser, Cronbach and Rajartnam (1965) and Endler (1966). These methods estimate the relative magnitude of each individual component of variance, expressed as a percentage of the sum of the different variance components. It was additionally decided to examine Condition 2 and Condition 3 in separate analyses by obtaining difference scores. Testing for the difference between the variance percentages was accomplished through the procedures described in Hirsch (1957).

- -

Insert

TABLE 1

About Here

- -

RESULTS

The first set of analyses were performed to determine whether significant order effects existed as a function of one-half of the subjects first rating their own behavior and then rating the behavior of their best friend while the other 80 subjects rated Others first and Self second. The 40 subjects within each condition (instructional set) were divided into 20 subjects who had been presented with Self first and 20 subjects who had been presented with Others first. The three-way analysis of variance model described earlier was used to analyze the Self ratings only. Tables 2 thru 5 present the percentages of variance accounted for by each of the component sources in the design for each condition. An examination of Table 2 reveals that subjects in condition 1 (Hunt, Endler instructional set) were very consistent in terms of the amount of variance accounted for by each of the various components whether Self was rated first or second. Tables 3, 4 and 5 reveal similar consistency. In no case in any of the four analyses did any single component source of variance account for a percentage of the total variance which was as much as 5 percent different as a function of order. Further, the differences within any one of these analyses are not consistent across the other three analyses. Thus, there is no evidence in these four analyses of any consistent order effects. This conclusion was based on the analyses of solely the Self rating data. Although no analysis of order effects was performed on Other ratings, the lack of any hint of difference in the Self ratings as a function of order suggested that order effects were

- - - - - - - - - - - - - - - - - - - -

Insert

Tables 2 through 5

About Here

- - - - - - - - - - - - - - - - - - - -

The Self ratings for the 40 subjects in condition 1 were analyzed with the three factor analysis of variance design described earlier. The summary table from this analysis is presented in Table 6. Each of the three main effects, subjects, situations and response modes and each of the first order interactions of these three main effects was reliably related to Self ratings on the S-R Inventory ($p < .001$). Tables 7, 8 and 9 present the result of the same statistical analysis performed on the self data of the subjects in conditions 2, 3 and 4 respectively. These three tables reveal results parallel to those in Table 6; that is, the analysis of variance of Self ratings of the subjects in each of the four different instructional sets showed significance beyond a rejection level of .001 for every main effect and every interaction in the design.

- -

Insert

Tables 6 through 9

About Here

- -

Each of the data sets analyzed in Tables 6 through 9 were subsequently subjected to further analysis to determine the percentage of the total variance which was accounted for by each of the main effects and interactions in the design. The results of these subsequent four analyses are presented in Tables 10through 13 for conditions 1 through 4 respectively. Examinations of Tables 10through 13 demonstrate that subject variance is as low as 4.7% of total variance in the condition in which subjects were instructed to concentrate upon the situation, and as high as 8.34% in the condition replicating the Hunt and Endler methodology. Condition 3, in which the instructional set stressed subject differences, produced subject variance totalling only 7.5% of total variance. Variance attributable to situations ranged from 7.8% to a high of 10.5%. Situational variance was highest in the condition in which

a situational instructional set was presented. Modes of response were, in all four analyses, by far the most potent effects. Variance contributions due to modes of response ranged from a low of 21.8% to a high of 25.7% of all variance. Modes of response variance was lowest in the situational instructional set and highest for the interactive instructional set. Each of the three interactional components contributed an average of 8.9% of the variance in the four analyses. Differences in size of any given interaction across the four analyses were negligible, and differences in the size of the variance contribution of the three first order interactions were small and inconsistent across the four analyses. In spite of the lack of evidence that in the overall analyses instructional set influenced the relative magnitude of sources of variation, it was decided to examine condition 2 versus condition 3 in a separate analysis since these were the clearest theoretical grounds upon which to test the hypotheses. Table 14 presents the differences scores between percentages of variance for each source component for conditions 2 and 3 when Self is rated. No statistically significant differences were obtained.

There is no compelling evidence that manipulation of the instructional set meaningfully influenced the relative contributions of each of the component sources of variation in this design. These results represent a clear negative finding with regard to Hypothesis 1 for the Self ratings.

- -

Insert

Tables 10 through 14

About Here

- -

The analyses of the ratings of the behavior of Others (one's best friend) is presented in Tables 15 through 18 for conditions 1 through 4 respectively. As with the ratings of Self, every independent variable and every interaction in all four analyses is significant beyond .001.

- -

Insert

Tables 15 through 18

About Here

- -

Ratings of Others on the S-R Inventory were further analyzed separately for each condition to determine the relative contributions in the variance source components to the total variance (Tables 19 through 22). The percentage of variance accounted for by the main effects of persons ranged from a low of 7.2% to a high of 21.7%. This latter figure was achieved in condition 3 in which subjects were given an experimental set strongly encouraging them to consider person variation in responding to each item. The low figure of 7.2% represented the Hunt and Endler standardized instruc-

tion. Condition 2 in which subjects were encouraged to concentrate on situational aspects produced subject variance of 11.4%, more than 10% lower than the instructional set emphasizing person to person variation. The interactional instructional set produced a variance contribution of 16.5% for persons.

Variance attributable to situations did not differ markedly among the four conditions. Variance attributable to modes of response was lower in all of the conditions in which a special instructional set was administered than in the standardized Hunt and Endler instruction condition. It was lowest (16.7%) in condition 3. There are no consistent differences among the four conditions in variance percentages ascribed to each of the three interactions. However, the situations by modes of response interaction is less potent in all four conditions than the subjects by modes or subjects by situations interaction. Further, the subjects by modes of response interaction is slightly stronger than the subjects by situations interaction in all four conditions. Table 23 presents the difference scores between percentages of variance for each source component for conditions 2 and 3 when Other is rated. Scores show no significant differences between percentages.

- -

Insert

Tables 19 through 23

About Here

- -

Tables 24 through 29 compare the results of Self and Other rating for conditions 1 through 4 respectively. It is apparent that certain consistent differences emerge. The average contribution of subjects in the rating of Other data is higher than the subjects contribution in the Self data. This is true for conditions 2, 3 and 4 but not for the standardized Hunt and Endler instructional set in which the difference is in the opposite direction but of negligible size. In three of the four conditions the variance attributable to the situations is greater in the self ratings data, but these differences are small. The self ratings data produces a larger variance contribution from modes of response under all four experimental conditions, although the differences are large only for conditions three and four. There are no consistent or large differences between the Self data and Other data on the variance contribution of the subjects by situations interaction. The subjects by modes of response interaction shows a small but consistent difference with the ratings of Others data producing a more potent effect in all four conditions. There are no discernible patterns in the variance percentages of the situations by modes of response interaction.

These data (the ratings of Others) clearly support Hypothesis 2 which predicts that the proportions of variance would differ as a function of self report versus attribution. These data also provide limited support for Hypothesis 3 which suggested that cognitive set would differentially influence variance proportions as a function of self report versus attribution.

- - - - - - - - - - - - - - - - - - - -

Insert

Tables 24 through 27

About Here

- - - - - - - - - - - - - - - - - - - -

In order to examine the potential importance of demographic variables which were recorded during test administration, Self rating data were broken down several ways for condition 1 only. The Self data in condition 1 was analyzed for males versus females. The results of these two analyses are presented in Tables 28 and 29. The same data were then analyzed for married and unmarried students. The results of these two analyses are presented in Tables 30 and 31. Finally, the self ratings from condition 1 were split into freshman subjects and sophomore subjects and these two analyses are presented in Tables 32 and 33.

- -

Insert

Tables 28 through 37

About Here

- -

As with the analyses of responses by instructional sets and by Self attribution versus Other attribution, the analyses of variance for sex, married status and class standing showed every interaction and every main effect to be significant beyond .001 with two exceptions, both of which were significant beyond .01.

Table 34 summarizes the variance percentages contributed by various sources for male subjects and female subjects in condition 1 under the self rating condition. An inspection of Table 3 shows that male subjects were extremely low in terms of the subject attribution component. They were also lower than females in terms of the variance attributable to situations. Mode of response was far more potent as a determinant of behavioral variation for males than for females. Variance due to interaction is not markedly different for male and female subjects.

- -

Insert

Table 34

About Here

- -

Data from married and unmarried subjects rating themselves under condition 1 are summarized in Table 35. There is a strong difference in terms of the amount of variance contributed by subject to subject variance. This source of variance is relatively small for married and quite large for unmarried subjects. Conversely the situational variance is much more important with married subjects than with unmarried subjects. Other differences are relatively small although the subjects by modes of response interaction is relatively low for married subjects.

- -

Insert

Table 35

About Here

- -

Table 36 presents the relative variance contributions of sources of variation for freshman subjects and sophomore subjects separately in condition 1 when rating themselves. Subject variation and situational variation are both notably more potent for the younger students while mode of response is a more important determinant for the sophomore students.

- -

Insert

Table 36

About Here

- -

DISCUSSION

As the Results section indicates, this study yielded a large body of data. The amount of raw data collected, the number of variables examined and the nature of the analytic procedures combined to produce a wealth of findings. Moreover, these findings may be looked at methodologically, substantively and theoretically. The general organization of this section is to first examine the substantive impact of the results (in the order in which they appear in the preceeding section); next, the larger theoretical issues are discussed and, finally, methodological problems and implications for future research are detailed.

The comparisons of Self ratings when Self was rated first with Self ratings when Self was rated second (i.e., after the rating of Other) showed no significant differences. The failure to find order effects is surprising, but experimentally fortuitous, in that it allowed pooling of data across orders for all subsequent analyses. It had been anticipated that there would be a carry-over effect such that the subjects first instructed to rate themselves in anxiety provoking situations would then tend to rate Others (their best friend) very much like themselves, while subjects rating Others first were expected to differentiate better between the response of their best friend and their perceptions of their own responses. This anticipated lack of differentiation

between Self and Other for the Self rating first order did not materialize. It may be that subjects in both orders failed to differentiate well between their own responses and those of Others and, in fact, primarily rated their own responses in both cases. If the basic differentiation between Self and Other in anxiety situations were lacking then the issue of order would, of course, become moot. This hypothesis is consistent with the later data on Self vs. Other differences.

The analysis of variance results of the Self rating data bears directly on two major questions: the degree to which the procedures utilized in this study replicated the sensitivity of the Endler and Hunt paradigm; and the degree to which instructional set was an effective experimental manipulation. The results provide a positive and definitive answer to the first question. For each analysis of variance, subjects, modes of response and situations and each of the interactions among these main effects was a significant discriminator of anxiety ratings of one's own behavior; that is, the three main effects and three interactions each accounted for a significant portion of the overall behavioral variance in the ratings (independent of the instructional condition under which the subject completed his protocol). Further, if the four conditions are pooled, the resulting averages bear a striking similarity to the results which Endler and Hunt obtained earlier. Specifically, when

these data are compared with the Endler and Hunt (1966) data from the Penn State sample, subject variance accounted for 7% of the total variation in the current data and approximately 6% in the Endler and Hunt study. Situational variance was somewhat lower in the Endler and Hunt sample representing 5% of the total variance as opposed to 9% of the total variance with this sample. Modes of response accounted for 24% of the variance in both studies. Subjects by situations accounted for approximately 10% of the total variation in both studies. Subjects by modes of response was also 10% of total variation in this study, and 11% in the Endler and Hunt study. In both data sets, situations by modes of response was the smallest of the interactions, representing 9% of total variation in this study and 7% of all variation in the Endler and Hunt study. The largest single difference in the two data sets is found in the residual variation which comprises 37% in the Endler and Hunt data and only 32% of all variation in this study. The overall picture is clearly one of striking similarity in spite of minor differences in subject population and several intervening years between the collection of the Endler and Hunt data and the data reported here.

The answer to the second (instructional set) question mentioned above is almost as definitive. The four different instructional sets did not significantly or consistently affect the proportions of variance accounted for by the various components

within the design. There are no data to suggest that ratings of one's anxiety responses to specific situations can be influenced by the nature or strength of the instructions or other verbal demand characteristics of the experimental situation. For Self ratings, variation due to persons was highest in the condition receiving the standardized Endler and Hunt instructions (Condition 1) rather than the condition in which subjects were instructed to emphasize person to person variation (Condition 3). Variation due to the interaction of persons by situations was highest for both the subjects presented with the standardized Endler and Hunt instructions (Condition 1) and the subjects presented with instructions to emphasize person variation (Condition 3). It was second lowest for the subjects in Condition 4 (interaction emphasis instructions).

The lack of evidence to support experimental Hypothesis 1 is particularly serious in the light of the close approximation to the original Endler and Hunt data by the four conditions as a whole and the condition replicating their instructional set (Condition 1) in particular. That is, failure to support the hypothesis that instructional set would modify relative proportions of variance may not be discounted as a failure to develop instruments of sufficient precision or reliability to measure an experimental effect which might, in fact, have been present. The instruments, methodology and analytic procedures have demonstrated

reliability and statistical power and may not be used to mitigate the failure to show results of instructional set. It may be argued alternatively that the instructional sets themselves and the procedures used to present the sets to the subjects were ineffective. While this argument is logically plausible, it is belied by numerous other studies using more subtle and less emphatic instructional set variations. Failure to find significant results should not be interpreted as proving the null hypothesis, but the failure to demonstrate any tendencies toward statistical significance taken in conjunction with the accurate replications of earlier studies suggests that the null hypothesis is presently the most parsimonious explanation of these data. The clearcut nonsignificant differences between the results in condition 2 and the scores in condition 3 seem to confirm the null hypothesis.

The analyses of the Other ratings are consistent with the Self ratings in that all main effects and all interactions account for significant proportions of the total behavioral variance and that there is no consistent support for the hypothesis that instructional set will influence the relative proportions of variance accounted for by specific main effects and their interactions. Tables 19 through 22 summarize the relative variance contributions of the component sources for the Other ratings, and show some large differences. These differences among conditions are not, however, consistent with the intent of the instructional set for each condition. For example, subject variance is comparable to the relatively low level found in the Self data in the Other data only for the Endler and Hunt standardized instructions. Condition 3, in which variation due to persons

was intended to be optimized does result in substantially higher subject variance (22% vs. 7%). Consistent with predictions, condition 3 resulted in the highest overall persons variance (22%), nearly twice that found in condition 2, in which situational variance was intended to be maximized. It is of interest to note that condition 4, which asked subjects to attend to the interaction of individual and situational factors, did yield a subject variance which was 50% higher than that resulting from condition 2, but nearly 25% lower than the subject variance resulting from condition 3. This would suggest that subjects responding in condition 4 were experiencing some heightened sense of person to person variation but that it was mitigated in part by the instruction to attend to both situational and personality factors. While variance due to situational differences was comparable across all four conditions, modes of response did produce slight differences. Variance was highest in condition 1 (Endler-Hunt) and lowest in condition 3, which emphasized person to person variation in the instructional set. Condition 4, in which the persons x situations interaction was stressed in orienting the subjects to their task did not produce an interaction variance that was notably higher or lower relative to those found in the other three experimental conditions.

Overall comparisons of Self ratings with Other ratings in terms of the relative variance contributions of the various components of the Analysis of Variance design suggest that these data were far kinder to experimental Hypotheses 2 and 3 than to the first Hypothesis. Subject (persons) variation accounted for a far greater percentage

of the total behavioral variance in the Other data (conditions 3 and 4) than in all of the Self data; that is, the person to person variation in the Self data (across conditions) represented about 7% of all variation and this was consistent with conditions 1 and 2 in the Other data. Conditions 3 and 4, however, accounted for 22% and 16% of all variation respectively. Thus, conditions 3 and 4 may well have resulted in the kind of generalized or stereotypic responding regarding perception of others that Mischel (1973) discussed earlier. Conditions 1 and 2 may have had similar effects upon the experimental subjects in that both instructional sets resulted in the subjects merely generalizing from their own response tendencies in specific situations. There is no evidence with regard to Self or Other ratings that Condition 4 was effective in producing the kind of differentiated interactional responding that was hypothesized. There are several other smaller but consistent differences between the Self ratings and Other ratings. Situational variance is greater for the Self data than for the ratings of Others. Again, this is consistent with a hypothesis that ratings of Others tend to be more stereotyped than ratings of Self. Similarly, the

variance contribution attributable to modes of response is greater for ratings of Self under all four experimental conditions than in the ratings of Others. This comparison of modes of response variance and variance due to situations for Self and for Others suggests that a subject has more difficulty delineating response differences as a function of anything other than consistent personality traits for Others (as opposed to rating himself).

Analyses of responses by sex, marital status and class standing again demonstrated that the sensitivity of the S-R Inventory was maintained across differing samples and with differing instructional sets. Additionally, there were some consistencies as a function of these demographic variables. Sex differences were primarily found in the main effects rather than the interactions of the Analysis of Variance design. Male subjects tended to overemphasize variation due to modes of response and underestimate variations due to subject to subject and situation to situation differences relative to female subjects. This finding parallels earlier research of Endler and Hunt (1969) with regard to situational variation but differs in that their subjects showed no differences on subject variation and mode of response variation. The sex differences documented here are particularly interesting in that they are in compliance with cultural prescriptions of sex roles. That is, the male sees certain kinds of responses as frequent, independent of the particular male or particular situation

in which those responses occur. They are socially acceptable or socially unacceptable responses for a male subject. Relative to this stance, the female subjects sees far more of behavior as dependent upon the particular female subject viewing the situation, and upon the nature of the situation itself. Thus, both male and female subjects reinforce a view of the female as more at the whim of the situation in which she is placed and varying more from individual to individual and of the male as exhibiting (or not exhibiting) certain kinds of responses consistently.

The analysis of the Self data as a function of marital status suggests that married students emphasize situational variation and de-emphasize subject variation relative to unmarried students. As with the sex difference results, the married-unmarried student differences are consistent with socially prescribed roles--and with some realities. The married student has less opportunity to view himself as a highly consistent actor across situations, because he must respond to a spouse, family responsibilities, and perhaps children. His view of himself as an ascetic intellectual may be compatible with what he experiences in the classroom but it is difficult to maintain when he is involved in child care responsibilities. Conversely, the unmarried student has a perceived role consistency and is also concerned with an emerging adult value system and life style. The unmarried student may, in

fact, see a considerable amount of person to person variation (and within person consistency) beyond what exists behaviorally.

The results of the analysis for the freshman vs. sophomore subjects are confusing. There is no apparent rationale for the freshman perceiving subject variation and situational variation as more important than they are seen by the sophomore students. Further, modes of response is a stronger determinant of ratings of anxiety responses for the sophomore students than it is for the younger freshman students. This, again, is contrary to theoretical expectations, which would suggest that the younger students would be more concerned with stereotypic responses and less aware of differences in situational demands.

Hypothesis 1 was convincingly rejected by both the Self data and the Other data. Instructional set did not appear to be a valid method of manipulating the relative strengths of the variance components of a persons x settings x modes of response paradigm. There are several implications of this failure to support Hypothesis 1. The first implication is that the S-R Inventory may be a methodological dead end for pursuing the theoretical goals of this type of research. If the relative variance contributions of the components of this design are immutable under widely varying experimental conditions, then the design has little potential for establishing the relative strength of the variance components to those experimental conditions, and instead

simply reflect some permanent relationships among those components. The second implication is that the failure to influence the relative strengths of the design components can be argued to support a theory that the S-R Inventory is measuring behavioral attributes that are consistent across settings, types of people, and conditions. However, there is strong evidence from research that has focused directly upon field observations of behavior to contradict that hypothesis. Some of this work was summarized earlier in discussing the article by Moos (1969). The most plausible remaining hypothesis is that the consistent percentages of variance that are demonstrated by the S-R Inventory, are an artifact of the inventory itself and its demand characteristics rather than a representation of any behavioral consistencies. This hypothesis garnered support from Endler and Hunt themselves when they created an analagous instrument to investigate hostility. The hostility inventory produced percentages which were quite different from the now familiar S-R Inventory breakdown. If the variation due to persons, subjects and response modalities is a function of the paper and pencil instrument with which the subject is asked about his responses, then consistent percentages will be found for as many inventories as are devised and the S-R Inventory, again, appears to be extremely limited in applicability.

The differences in this study between ratings of Self and ratings of one's best friend are encouraging. They are generally consistent with predictions flowing from Mischel's review and the

work of Jones and Nisbett (1971). They also partially refute the hypothesis discussed above that the S-R Inventory will produce immutable results independent of the manner in which it is applied.

Hypothesis 3 found only partial and very weak support in these data. Since Hypothesis 3 posited an interaction of instructional set with the Self vs. Other rating dimension and since instructional set was essentially ineffective in this design, it would have been difficult for such interaction to be meaningful. The differences in the Other ratings analyses as a function of experimental condition (instructional set) result in a statistical interaction because of the absence of differences in the Self ratings data as a function of condition. However, this state of affairs is quite different than the hypothesized interaction in which instructional set was expected to be potent for both the Self and Other ratings but to produce larger condition differences in the Self ratings. The interaction obtained is, of course, the opposite of that predicted.

This study as a whole is remarkably consistent with the earlier results on the S-R Inventory obtained by Endler and Hunt (1966). As such, it is useful to review the general picture which these results present in terms of their implications for personality theory. Subject to subject variation and subjects x mode of response variation, which are the two components of the paradigm investigated here that may reasonably be considered as the province of traditional personality theorists do not account for as much as 20% of

the total behavioral variance in either this study or the Endler and Hunt work. The implication of this is that theories of behavior which pay homage to situations, modes of response, and interactions as well as to subject and subject x mode of response variation can potentially predict 50%-70% of total behavioral variation as opposed to the 10%-20% which appears to be the upper bound of the best developed traditional personality theories. This argument has been promulgated by a number of theoreticians and the extensive data in this study are consistent with those arguments. It must be pointed out that those arguments and that particular interpretation of the data are dependent upon two major qualifications. First, it is critical to determine the congruence between ratings of behavior on the S-R Inventory and actual behaviors in realistic social settings. This is currently unknown, and Moos' data, while compelling for its theoretical implications, does not address this point because he chose to investigate essentially trivial behaviors rather than the kinds of meaningful behaviors that are codified within the S-R Inventory (but uninvestigated behaviorally). The second major qualification is that Endler and Hunt chose to investigate modes of response by delineating a large number of manifestations of one particular generic response, anxiety. It should be remembered that most personality theorists are concerned with differential tendencies to express generic responses (i.e., anger, grief, joy, anxiety), rather than the

tendency to manifest one response (i.e., anxiety) with one minor manifestation (e.g., sweaty palms) rather than some other minor manifestation (e.g., heart beats faster). Thus, the Endler and Hunt terminology is misleading and can easily be overgeneralized in terms of its implications for theoretical constructions. Response variation for Endler and Hunt must remain tied to the differential tendency to manifest some general response by this or that molecular reaction rather than signifying the use of one type of response in a given situation rather than another type of response. Thus, the specific percentages of variation accounted for by modes of response and the two interactions involving modes of response in the Endler and Hunt paradigm must be interpreted carefully because they do not translate isomorphically to theoretical constructs. This is not to deny the import of these findings. It is reasonable to expect that if a statistical procedure were developed that could analyze subjects, situations and types of response with each general type of response being represented by several exemplars (modes of response) that the variation due to types of response would be, in fact, far higher than that found so far by an anxiety inventory alone. That is, an inventory combining responses indicative of anxiety, dependency and hostility would permit researchers to make statements not only about the likelihood of a given response but its relationship to alternative "trait" responses in a given situation.

This study presents some indirect but disquieting implications for typical clinical prediction and diagnosis. First, like similar earlier research, this study suggests that diagnosis and prediction are activities involving, at best, some quite small subset of an

individual's behaviors. This is true for at least two reasons. The first of these is that clinical work, by and large, proceeds from traditional personality theory and, as such, does not deal with situational variation or response variation let alone the interactions of these major determinants of behavior. The second limitation upon clinical practice is that the methodology itself examines only attributes of some stable personality posited as the cause for much or most of the individual's behavior. To the extent that the S-R Inventory and similar instruments reflect behavioral consistencies, clinical diagnosis and prediction may be expected to improve in their validity as they become cognizant of situational and response constraints as well as personality constraints. This is no small order as it calls for a major revolution in personality theory and for clinical methodology to begin to address aspects of the world which have until now been viewed as tangential to behavior.

Effective change in the direction of inclusion of situational variation at either an applied clinical or a research theoretical level demands that "situations" begin to be approached with conceptual schemes paralleling those which have been applied to persons. In this regard, there have been some recent efforts calling for taxonomies and conceptualizations of environments (Moos, 1973; Frederickson, 1972). Frederickson reviews several early attempts at providing situational taxonomies and argues that such a classification scheme is currently sensible technologically. Moos also

argues that there are a number of currently available viable avenues which might lead to a conceptualization (of environments) with sufficient rigor and theoretical elegance to stimulate further research on the relationship of situation and person to elicited behavior. This study has also demonstrated that consistent differences arise when rating the behavior of Others as opposed to rating one's own behavior. Person to person variation, for example, appears to be a stronger determinant of Others behavior than of one's own behavior. This is quite consistent with personality theorists' insistence upon using subject to subject differences as the sole basis for predicting future behaviors. Based on the results of this study, personality theorists might have been more sanguine about the potential of such an approach had they been predicting their own behavior instead of that of clients. It may be noted that these data on Self vs. Other ratings are consistent with research investigating self prediction vs. prediction of others and that, again, prediction of one's own behavior can be accomplished with significantly more accuracy than similar predictions of others behavior. In light of this, it appears that it may be more important to develop the theoretical schema and the assessment devices for dealing with situational and response variables if we are to understand (in the sense of predict) the behavior of others, in that this study suggests that there is an inherent tendency to overgeneralize the trait consistencies which we perceive in others.

If people (laymen and clinicians alike) are already and inherently attuned to such trait consistencies, then a better or more refined personality theory based on trait concepts will have but minimal effect upon the ultimate efficacy of the understanding of behavior, while the development of response and situational concepts, and their inclusion in theoretical and predictive strategies, may result in immediate gross improvements of our understanding of behavior.

An additional theoretical issue concerns the relationship of these results to existing theory concerning anxiety and anxiety responses. Endler and Hunt (1969) have suggested that anxiety is idiosyncratically organized for each individual. They have been led to this position by the consistently large percentage of variation accounted for by the modes of response component of their design. This study also finds large percentages of total variation in ratings due to differences among modes of response (approximately 22%) and this figure is swelled considerably if the interactions involving modes of response are included. In fact, modes of response and the two interactions involving modes of response account for over 40% of all the variation in this study. It does not follow from this finding, however, that anxiety is idiosyncratically organized any more than it follows from the relatively low percentages of behavioral variance accounted for by person to person differences that personality is <u>not</u> idiosyncratically organized.

It is clear from this study and many others that anxiety manifests itself in different ways in different individuals; that is, for some individuals one specific mode of anxiety response may be quite frequent while in another equally anxious individual some different mode of anxiety response is frequent.

This is not sufficient to deny some general organizing principles among the many modes of a given generic response across individuals. Since Endler and Hunt have simply listed a large number of anxiety responses rather than attempted to systematize the anxiety system for one or for all individuals, it is not clear that generalized principles could have emerged even if they do exist. For example, it may be that certain high anxiety situations bring out high frequency anxiety responses in all individuals and that low anxiety situations elicit low frequency anxiety responses out of statistical proportion to their expectancy in all individuals. If this were so, then anxiety would not be idiosyncratically organized but Endler and Hunt would also be unable to document that kind of organization with the S-R Inventory. They have, in fact, made no systematic attempt to determine the relative organization of the subresponses within the anxiety syndrome across individuals. Finally, the anxiety indicators utilized in the S-R Inventory represent some inconsistently sampled subset of an unknown population of anxiety responses. This subset is not a random sample and may not be representative in any sense. Unless one is willing

to use an operational definition and define anxiety as the sum of responses on the S-R Inventory, then the S-R Inventory is better viewed as a vehicle for looking at relative contributions of anxiety responses across situations and across persons than as an instrument for investigating the nature of anxiety within persons.

There are several methodological issues which arose during data collection or analysis that deserve examination. First, in spite of some pilot research, there was an undue amount of subject fatigue during actual data collection. This could have been overcome, had it been anticipated, by using twice as many subjects and presenting only Self or Other ratings to any single subject. The lack of order effect in the Self data suggests that this fatigue, while obvious to the Experimenter, did not systematically affect the nature of the results. The second methodological issue concerns the efficacy of the instructional sets utilized. The instructional sets were devised to be as emphatic as possible while still maintaining some credibility as normal, experimental instructions. The instructions emphasized the one particular component which was to be attended to by the subject and then re-emphasized that component at the end of the instructions. Further, the written instructions which accompanied the S-R Inventory further emphasized the component corresponding to the condition the subject was assigned. Since the results fail to show differences as a result of instructional set, it is reasonable to ask whether

the instructional sets were devised with sufficient potency or impact upon the subjects. This question might have been answered with extensive pilot research and such preparatory work was considered. It was rejected early because other personality investigators have been able to obtain a strong behavioral differences based upon less emphatic instructional differences and because it was felt that differences produced by instructions which were more differentiated than those used here would have limited, if any, implications for more realistic cognitive sets. The final methodological issue concerns the decision to use only anxiety responses (the S-R Inventory) rather than generically different responses such as hostility, euphoria, aggression, or dependency. This latter approach was rejected on pragmatic grounds; there are no established statistical procedures for analyzing the relative variance contributions of the components of a four-way design and such an approach would have demanded the construction of parallel inventories for each of the various response types (a major research effort in and of itself).

This research contains several areas which demonstrate need for continued study. The most obvious of these is certainly the need to operationalize the S-R Inventory methodology into a behavioral study which focuses on meaningful but observable modes of responses. Such observational work will be a necessity if the S-R Inventory results are to have any portion of their potential impact upon

personality theories.

A second promising line of future research was alluded to earlier. If the analytic procedures can be managed, then far more important results will accrue to a methodology which encompasses several types of responses and a number of modes of each of those response types. That kind of study will speak to the questions which have always been of primary interest. For example, to what degree does a person's tendency to be anxious rather than aggressive depend on the person, the situation, or the type of anxiousness or aggressiveness that is in question, and secondly, to what extent do interactions among those factors account for the observed response? Those critical questions cannot be answered with the S-R Inventory because it restricts itself to one response, anxiety, while the real concern with behavior is a question of the relative likelihood of one generic response as opposed to another.

A third interesting and necessary avenue for future studies is the examination of the consistency of results when using the S-R Inventory. Is this a function of the verbal habits of the subjects? Is it some other demand characteristic (noninstructional) of the situation in which the S-R Inventory has so far been administered? Is there any congruence between ratings given by subjects on the S-R Inventory and the behavior of those same subjects when exposed to the kinds of situations described in the S-R Inventory? Attempts to answer these questions will of necessity be heavily methodological

in focus, but like the original work with S-R Inventory, Raush et al's work and the present study, the methodological questions addressed have major theoretical importance in terms of understanding and predicting human personality and behavior.

REFERENCES

Alker, H.A. Is personality situationally specific or intrapsychically consistent, Journal of Personality, 1972, 40, 1-16.

Bem, D.J. Constructing cross situational consistencies in behavior: Some thoughts on Alker's critique of Mischel, Journal of Personality, 1972, 40, 17-26.

Dewey, R. & Humber, W.J. The development of human behavior, New York: Macmillan, 1951.

D'Zurilla, T.J. Effects of behavioral influence techniques applied in group discussions on subsequent verbal participation. Unpublished doctoral dissertation, University of Illinois, 1964.

Endler, N.S. Estimating variance components from mean squares for random and mixed effects analysis of variance models. Perceptual Motor Skills, 1966, 559-570.

Endler, N.S., & Bain, J.M. Interpersonal anxiety as a function of social class. Journal of Social Psychology, 1966, 70, 221-227.

Endler, N.S. & Hunt, J.McV. Sources of behavioral variance as measured by the S-R Inventory of Anxiousness. Psychological Bulletin, 1966, 65, #6, 338.

Endler, N.S. & Hunt, J.McV. S-R Inventories of Hostility and comparisons of the proportions of variance from persons, responses and situations for hostility and anxiousness. Journal of Personality and Social Psychology, 1968, 9, 309-315 (a).

Endler, N.S. & Hunt, J.McV. Triple interaction variance in the S-R Inventory of Anxiousness. Perceptual Motor Skills, 1968, 27, (3), b.

Endler, N.S. & Hunt, J.McV. Generalizability of contributions from sources of variance in the S-R Inventories of Anxiousness. Journal of Personality, 1969, 37, 1-25.

Endler, N.S. & Hunt, J.McV. & Rosenstein, A.J. An S-R Inventory of Anxiousness. Psychological Monographs, 1962, 76, (17 Whole No. 536).

Frederiksen, N. Toward a taxonomy of situations. American Psychologist, 1972, 27, 114-123.

Gleser, G.C., Cronbach, L.J. & Rajartnam, W. Generalizability of scores influenced by multiple sources of variance. Psychometrika, 1959, 30, 395-418.

Haywood, H.C. & Dobbs, V. Motivation and anxiety in High School boys. Journal of Personality, 1964, 32, 371-9.

Hirsch, W. Introduction to Modern Statistics, Maxmillan Co., New York, 1957.

Hoy, Elizabeth. Influence of incongruity on reported anxiety. Unpublished master's thesis, York University, 1966.

Hunt, J.McV. Traditional personality theory in the light of recent evidence. American Scientist, 1965, 53, 80-96.

Jones, E.E. & Nisbett, R.E. The actor and the observer: Divergent perceptions of the causes of behavior. In E. E. Jones et al (Eds.) Attribution: Perceiving the causes of behavior. McCaleb-Seiler, 1971.

Mandler, G. & Sarason, S.B. A study of anxiety and learning. Journal of Abnormal and Social Psychology, 1952, 47, 166-173.

Mischel, W. Personality and Assessment. New York: Wiley, 1968.

Mischel, W. Direct versus indirect personality assessment: evidence and implications. Journal of Consulting and Clinical Psychology, 1972, 38 (3), 319-324.

Mischel, W. Toward a social learning reconceptualization of personality. Psychological Review, 1973, 80 (4), 252-283.

Moos, R. Differential effects of ward settings on psychiatric patients. Journal of Nervous and Mental Disease, 1967, 145, 262-283.

Moos, R. Differential effects of ward settings on psychiatric patients: A replication and extension. Journal of Nervous and Mental Disease, 1968, 147, 386-393(a).

Moos, R. A situational analysis of a therapeutic community milieu. Journal of Abnormal Psychology, 1968, 73, 49-61(b).

Moos, R. Sources of variance in response to questionnaires and in behavior. Journal of Abnormal Psychology, 1969, 74, #4, 405-412.

Moos, R. & Daniels, D. Differential effects of ward settings on psychiatric staff, Archives of General Psychology, 1967, 17, 75-82.

Moos, R. Conceptualizations of Human Environments. American Psychologist, 1973, 28, 652-665.

Paul, G.L. Insight vs. desensitization in psychotherapy: an experiment in anxiety reduction. Stanford, California, Stanford University Press, 1966.

Raush, H.L., Dittman, A.R. & Taylor, T.J. The interpersonal behavior of children in residential treatment. Journal of Abnormal & Social Psychology, 1959, 9, 26(a).

Raush, H.L., Dittman, A.R. & Taylor, T.J. Person, setting and change in social interaction. Human Relations, 1959, 12, 361-478(b).

Raush, H.L., Farbman, I. & Llewellyn, L.G. Person, setting and change in social interaction II--a normal control study. Human Relations, 1960, 13, 305-322.

Silverstein, A.B. & Fisher, G. Estimated variance components in the S-R Inventory of Anxiousness. Perceptual Motor Skills, 1968, 27, 740-742.

Taylor, Janet. A personality scale of manifest anxiety. Journal of Abnormal and Social Psychology, 1953, 48, 285-290.

Vernon, P.E. Personality Assessment: a critical survey, New York: John Wiley, 1964.

APPENDIX

APPENDIX A

STANDARD INSTRUCTIONAL BASE

Print your name, the date of your birth, age, sex, etc., in the blanks provided for this. After you have completed filling in the blanks, please STOP and wait for the tape recorded instructions.

This inventory presents a means of studying peoples' reaction to and attitudes towards various types of situations. On the following pages are represented 10 situations which most people have experienced personally or vicariously through stories, etc. For each of the situations certain common types of personal reaction and feelings are listed. Indicate in the alternatives representing the 5 points on the scales shown in this booklet, the degree to which you would show these reactions and feelings in situations indicated.

(INSTRUCTIONAL INSERT HERE)

Here is an example:

You are about to go on a roller coaster

Heart beats faster	1	2	3	4	5
	Not at all				Much Faster

If your heart beats much faster in this situation, you would circle alternative 5; if your heart beats somewhat faster, you would circle either alternative 2, 3, or 4 depending on how much faster; if in this situation your heart does not beat faster at all, you would circle alternative 1. If you have no questions, please turn to the items on the following pages.

Appendix A (cont.)

"You are just starting off on a long automobile trip"

Circle one of the five alternative degrees of reaction or attitude for each of the following 14 items.

Heart beats faster	Not at all	1	2	3	4	5 Much faster
Get an "uneasy feeling"	None	1	2	3	4	5 Very strongly
Emotions disrupt action	Not at all	1	2	3	4	5 Very disruptive
Feel exhilarated and thrilled	Very much	1	2	3	4	5 Not at all
Want to avoid situation	Not at all	1	2	3	4	5 Very much
Perspire	Not at all	1	2	3	4	5 Perspire much
Need to urinate frequently	Not at all	1	2	3	4	5 Very frequently
Enjoy the challenge	Enjoy much	1	2	3	4	5 Not at all
Mouth gets dry	Not at all	1	2	3	4	5 Very dry
Become immobilized	Not at all	1	2	3	4	5 Completely

Appendix A (cont.)

Get full feeling in stomach	None	1	2	3	4	5 Very full
Seek experiences like this	Very much	1	2	3	4	5 Not at all
Have loose bowels	None	1	2	3	4	5 Very much
Experience nausea	Not at all	1	2	3	4	5 Much nausea

Remember: Please think of how your own personality determines your responses.

Appendix A (cont.)

The entire booklet for the Inventory of Attitudes toward Specific Situations contains 10 situation pages which are identical as to degrees of reaction or attitude on a five-point scale for the 14 responses. The situations shown at the top of each of the pages are:

1. You are going to meet a new date.
2. You are taking a final examination.
3. You are entering a roomful of strangers.
4. You are stopped by a policeman while driving.
5. You are starting off on a long automobile trip.
6. You are going for a medical exam.
7. You encounter a strange dog on the street.
8. You are entering a competitive contest.
9. You are going on an interview for an important job.
10. You are going into a psychological experiment.

TABLES

TABLE 1

NUMBER OF SUBJECTS IN EACH EXPERIMENTAL CONDITION BY ORDER OF RATING SELF AND OTHER

Source	Condition 1	Condition 2	Condition 3	Condition 4
Self First	20	20	20	20
Other First	20	20	20	20
TOTAL	40	40	40	40

TABLE 2

PERCENTAGES OF VARIANCE ACCOUNTED FOR BY COMPONENT SOURCES OF REPORTED RESPONSES TO SITUATIONS FOR RATING SELF FIRST AND RATING OTHER FIRST IN CONDITION ONE

Source	Self First	Self Second
Subject	8.27	5.56
Sits	7.97	5.24
Modes	24.18	25.74
Subject X Sits	12.87	10.82
Subject X Modes	8.75	10.84
Sits X Modes	6.37	8.42
Residual	31.60	33.37
TOTAL	100.00	100.00

TABLE 3

PERCENTAGES OF VARIANCE ACCOUNTED FOR BY COMPONENT SOURCES OF REPORTED RESPONSES TO SITUATIONS FOR RATING SELF FIRST AND RATING OTHER FIRST IN CONDITION TWO

Source	Self First	Self Second
Subject	4.09	6.99
Sits	11.60	11.00
Modes	22.83	21.11
Subject X Sits	9.46	12.62
Subject X Modes	11.18	13.44
Sits X Modes	10.20	6.85
Residual	30.63	28.00
TOTAL	100.00	100.00

TABLE 4

PERCENTAGES OF VARIANCE ACCOUNTED FOR BY COMPONENT SOURCES OF REPORTED RESPONSES TO SITUATIONS FOR RATING SELF FIRST AND RATING OTHER FIRST IN CONDITION THREE

Source	Self First	Self Second
Subject	6.34	9.44
Sits	7.04	8.80
Modes	25.78	22.85
Subject X Sits	9.31	10.08
Subject X Modes	11.72	15.45
Sits X Modes	8.74	6.15
Residual	31.07	27.22
TOTAL	100.00	100.00

TABLE 5

PERCENTAGES OF VARIANCE ACCOUNTED FOR BY COMPONENT SOURCES OF REPORTED RESPONSES TO SITUATIONS FOR RATING SELF FIRST AND RATING OTHER FIRST IN CONDITION FOUR

Source	Self First	Self Second
Subject	8.50	10.57
Sits	8.96	7.01
Modes	23.89	27.38
Subject X Sits	9.18	8.97
Subject X Modes	10.80	10.85
Sits X Modes	8.37	8.11
Residual	30.31	27.12
TOTAL	100.00	100.00

TABLE 6

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING SELF
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	39.	1293.98	33.18	5.29***
Sits	9.	1036.51	115.17	10.88***
Modes	13.	3065.68	235.82	25.50***
Subject X Sits	351.	1466.02	4.18	5.62***
Subject X Modes	507.	1441.14	2.84	3.82***
Sits X Modes	117.	836.46	7.15	9.62***
Residual	4563.	3391.01	0.74	1.00
TOTAL	5599.	12530.79	2.24	

***$p < .001$

TABLE 7

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING SELF
IN CONDITION TWO

Source	DF	SS	MS	F
Subject	39.	783.27	20.08	3.48***
Sits	9.	1267.95	140.88	11.75***
Modes	13.	2623.86	201.84	17.38***
Subject X Sits	351.	1208.45	3.44	4.68***
Subject X Modes	507.	1556.20	3.07	4.17***
Sits X Modes	117.	1085.65	9.28	12.60***
Residual	4563.	3358.65	0.74	1.00
TOTAL	5599.	11884.03	2.12	

***$p < .001$

TABLE 8

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING SELF
IN CONDITION THREE

Source	DF	SS	MS	F
Subject	39.	1044.90	26.79	4.63***
Sits	9.	972.05	108.01	9.87***
Modes	13.	2534.11	194.93	9.23***
Subject X Sits	351.	1265.81	3.61	5.89***
Subject X Modes	507.	1415.86	2.79	4.56***
Sits X Modes	117.	930.37	7.95	3.00***
Residual	4563.	2790.38	0.61	1.00
TOTAL	5599.	10953.47	1.96	

***$p < .001$

TABLE 9

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING SELF
IN CONDITION FOUR

Source	DF	SS	MS	F
Subject	39.	905.28	23.21	4.07***
Sits	9.	926.57	102.95	9.02***
Modes	13.	2941.31	226.25	20.81***
Subject X Sits	351.	1209.26	3.45	5.37***
Subject X Modes	507.	1470.51	2.90	4.52***
Sits X Modes	117.	1007.64	8.61	13.43***
Residual	4563.	2926.03	0.64	1.00
TOTAL	5599.	11386.60	2.03	

***$p < .001$

TABLE 10

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF SELF IN CONDITION ONE

Source	Var. Comp.	PCT
Subject	0.19	8.34
Sits	0.19	8.11
Modes	0.57	24.59
Subject X Sits	0.25	10.65
Subject X Modes	0.21	9.11
Sits X Modes	0.16	6.95
Residual	0.74	32.26
TOTAL	2.30	100.00

TABLE 11

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF SELF IN CONDITION TWO

Source	Var. Comp.	PCT
Subject	0.10	4.68
Sits	0.23	10.54
Modes	0.48	21.77
Subject X Sits	0.19	8.85
Subject X Modes	0.23	10.68
Sits X Modes	0.21	9.78
Residual	0.74	33.70
TOTAL	2.18	100.00

TABLE 12

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF SELF IN CONDITION THREE

Source	Var. Comp.	PCT
Subject	0.15	7.46
Sits	0.17	8.61
Modes	0.46	22.96
Subject X Sits	0.21	10.63
Subject X Modes	0.22	10.84
Sits X Modes	0.18	9.12
Residual	0.61	30.39
TOTAL	2.01	100.00

TABLE 13

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF SELF IN CONDITION FOUR

Source	Var. Comp.	PCT
Subject	0.13	5.97
Sits	0.16	7.81
Modes	0.54	25.72
Subject X Sits	0.20	9.57
Subject X Modes	0.23	10.79
Sits X Modes	0.20	9.52
Residual	0.64	30.63
TOTAL	2.09	100.00

TABLE 14

PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT AND DIFFERENCE SCORES BETWEEN REPORTED RESPONSES FOR RATING SELF IN CONDITION 2 AND CONDITION 3

Source	Condition 2 PCT	Condition 3 PCT	Z
Subject	4.68	7.46	-.52
Sits	10.54	8.61	.33
Modes	21.77	22.96	-.11
Subject X Sits	8.85	10.63	-.26
Subject X Modes	10.68	10.84	.00
Sits X Modes	9.78	9.12	.15
Residual	33.70	30.39	.34
TOTAL	100.00	100.00	

TABLE 15

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING OTHER
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	39.	1095.36	28.09	4.32***
Sits	9.	731.74	81.30	8.03***
Modes	13.	2823.04	217.16	23.47***
Subject X Sits	351.	1417.03	4.04	5.71***
Subject X Modes	507.	1604.64	3.16	4.48***
Sits X Modes	117.	795.09	6.80	9.62***
Residual	4563.	3224.45	0.71	1.00
TOTAL	5599.	11691.33	2.09	

***$p < .001$

TABLE 16

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING OTHER
IN CONDITION TWO

Source	DF	SS	MS	F
Subject	39.	1738.16	44.57	5.95***
Sits	9.	995.03	110.56	10.08***
Modes	13.	2604.61	200.35	19,59***
Subject X Sits	351.	1561.25	4.45	6.67***
Subject X Modes	507.	1878.38	3.70	5.55***
Sits X Modes	117.	841.40	7.19	10.78***
Residual	4563.	3044.32	0.67	1.00
TOTAL	5599.	12663.14	2.26	

***$p < .001$

TABLE 17

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING OTHER
IN CONDITION THREE

Source	DF	SS	MS	F
Subject	39.	2986.75	76.58	10.87***
Sits	9.	876.65	97.41	10.50***
Modes	13.	2108.36	162.18	17.42***
Subject X Sits	351.	1328.53	3.78	6.83***
Subject X Modes	507.	1934.34	3.82	6.89***
Sits X Modes	117.	707.51	6.05	10.92***
Residual	4563.	2527.02	0.55	1.00
TOTAL	5599.	12469.14	2.23	

***$p < .001$

TABLE 18

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR RATING OTHER
IN CONDITION FOUR

Source	DF	SS	MS	F
Subject	39.	2217.57	56.86	9.21***
Sits	9.	1086.27	120.70	11.03***
Modes	13.	2587.80	199.06	18.31***
Subject X Sits	351.	1181.98	3.37	6.83***
Subject X Modes	507.	1672.48	3.30	6.69***
Sits X Modes	117.	943.66	8.07	16.36***
Residual	4563.	2249.00	0.49	1.00
TOTAL	5599.	11938.74	2.13	

***$p < .001$

TABLE 19

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF OTHER IN CONDITION ONE

Source	Var. Comp.	PCT
Subject	0.15	7.19
Sits	0.13	5.93
Modes	0.52	24.25
Subject X Sits	0.24	11.10
Subject X Modes	0.25	11.47
Sits X Modes	0.15	7.10
Residual	0.71	32.96
TOTAL	2.14	100.00

TABLE 20

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF OTHER IN CONDITION TWO

Source	Var. Comp.	PCT
Subject	0.26	11.41
Sits	0.18	7.66
Modes	0.48	20.47
Subject X Sits	0.27	11.63
Subject X Modes	0.30	13.08
Sits X Modes	0.16	7.02
Residual	0.67	28.73
TOTAL	2.32	100.00

TABLE 21

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF OTHER IN CONDITION THREE

Source	Var. Comp.	PCT
Subject	0.50	21.74
Sits	0.16	6.89
Modes	0.38	16.73
Subject X Sits	0.23	10.10
Subject X Modes	0.33	14.28
Sits X Modes	0.14	6.01
Residual	0.55	24.24
TOTAL	2.28	100.00

TABLE 22

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF OTHER IN CONDITION FOUR

Source	Var. Comp.	PCT
Subject	0.36	16.48
Sits	0.20	8.92
Modes	0.47	21.42
Subject X Sits	0.20	9.35
Subject X Modes	0.28	12.77
Sits X Modes	0.19	8.62
Residual	0.49	22.44
TOTAL	2.20	100.00

TABLE 23

PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT AND DIFFERENCE SCORES BETWEEN REPORTED RESPONSES FOR RATING OTHER IN CONDITION 2 AND CONDITION 3

Source	Condition 2 PCT	Condition 3 PCT	Z
Subject	11.41	21.74	-1.25
Sits	7.66	6.89	.19
Modes	20.47	16.73	.47
Subject X Sits	11.63	10.10	.14
Subject X Modes	13.08	14.28	- .13
Sits X Modes	7.02	6.01	.18
Residual	28.73	24.24	.41
TOTAL	100.00	100.00	-

TABLE 24

PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATINGS OF BOTH SELF AND OTHER IN CONDITION ONE

Source	Self PCT	Other PCT
Subject	8.34	7.19
Sits	8.11	5.93
Modes	24.59	24.25
Subject X Sits	10.65	11.10
Subject X Modes	9.11	11.47
Sits X Modes	6.95	7.10
Residual	32.26	32.96
Error	0.00	0.00
TOTAL	100.00	100.00

TABLE 25

PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATINGS OF BOTH SELF AND OTHER IN CONDITION TWO

Source	Self PCT	Other PCT
Subject	4.68	11.41
Sits	10.54	7.66
Modes	21.77	20.47
Subject X Sits	8.85	11.63
Subject X Modes	10.68	13.08
Sits X Modes	9.78	7.02
Residual	33.70	28.73
Error	0.00	0.00
TOTAL	100.00	100.00

TABLE 26

PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATING OF BOTH SELF AND OTHER IN CONDITION THREE

Source	Self PCT	Other PCT
Subject	7.46	21.74
Sits	8.61	6.89
Modes	22.96	16.73
Subject X Sits	10.96	10.10
Subject X Modes	10.84	14.28
Sits X Modes	9.12	6.01
Residual	30.39	24.24
Error	0.00	0.00
TOTAL	100.00	100.00

TABLE 27

PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR RATINGS OF BOTH SELF AND OTHER IN CONDITION FOUR

Source	Self PCT	Other PCT
Subject	5.97	16.48
Sits	7.81	8.92
Modes	25.72	21.42
Subject X Sits	9.57	9.35
Subject X Modes	10.79	12.77
Sits X Modes	9.52	8.62
Residual	30.63	22.44
Error	0.00	0.00
TOTAL	100.00	100.00

TABLE 28

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR MALES
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	12.	160.38	13.36	2.82***
Sits	9.	214.18	23.80	4.38***
Modes	13.	1041.18	80.09	20.41***
Subject X Sits	108.	371.21	3.44	5.43***
Subject X Modes	156.	301.16	1.93	3.05***
Sits X Modes	117.	307.37	2.63	4.15***
Residual	1404.	888.94	0.63	1.00
TOTAL	1819.	3284.42	1.81	

***$p < .001$

TABLE 29

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR FEMALES
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	26.	839.14	32.27	4.80***
Sits	9.	899.04	99.89	11.08***
Modes	13.	2097.46	161.34	20.63***
Subject X Sits	234.	1018.10	4.35	5.53***
Subject X Modes	338.	1067.02	3.16	4.01***
Sits X Modes	117.	637.94	5.45	6.93***
Residual	3042.	2393.23	0.79	1.00
TOTAL	3779.	8951.92	2.37	

***$p < .001$

TABLE 30

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR MARRIED SUBJECTS
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	19.	347.55	18.29	3.30***
Sits	9.	756.65	84.07	10.93***
Modes	13.	1564.54	120.35	19.32***
Subject X Sits	171.	658.74	3.85	5.50***
Subject X Modes	247.	590.71	2.39	3.41***
Sits X Modes	117.	530.86	4.54	6.47***
Residual	2223.	1558.25	0.70	1.00
TOTAL	2799.	6007.30	2.15	

***$p < .001$

TABLE 31

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR UNMARRIED SUBJECTS
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	16.	805.31	50.33	7.38***
Sits	9.	311.74	34.64	5.65***
Modes	13.	1256.84	96.68	16.34***
Subject X Sits	144.	559.64	3.89	5.24***
Subject X Modes	208.	763.73	3.67	4.95***
Sits X Modes	117.	349.49	2.99	4.02***
Residual	1872.	1389.43	0.74	1.00
TOTAL	2379.	5436.19	2.29	

***$p < .001$

TABLE 32

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR FRESHMEN
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	25.	960.82	38.43	6.39***
Sits	9.	784.79	87.20	10.90***
Modes	13.	1903.98	146.46	21.82***
Subjects X Sits	225.	904.96	4.02	5.43***
Subjects X Modes	325.	888.69	2.73	3.69***
Sits X Modes	117.	552.05	4.72	6.36***
Residual	2925.	2168.50	0.74	1.00
TOTAL	3639.	8163.78	2.24	

***$p < .001$

TABLE 33

ANALYSIS OF VARIANCE OF REPORTED RESPONSES
TO SITUATIONS FOR SOPHOMORES
IN CONDITION ONE

Source	DF	SS	MS	F
Subject	5.	100.31	20.06	3.09**
Sits	9.	122.32	13.59	2.52**
Modes	13.	538.98	41.46	9.40***
Subject X Sits	45.	183.28	4.07	5.99***
Subject X Modes	65.	201.21	3.10	4.55***
Sits X Modes	117.	233.60	2.00	2.94***
Residual	585.	397.71	0.68	1.00
TOTAL	839.	1777.40	2.12	

***$p < .001$

**$p < .01$

TABLE 34

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR BOTH MALES & FEMALES IN CONDITION ONE

Source	Var. Comp.	Male PCT	Var. Comp.	Female PCT
Subject	0.06	3.31	0.18	7.47
Sits	0.10	5.41	0.24	9.84
Modes	0.59	31.42	0.57	23.28
Subject X Sits	0.20	10.74	0.25	10.42
Subject X Modes	0.13	6.96	0.24	9.70
Sits X Modes	0.15	8.22	0.17	7.07
Residual	0.63	33.95	0.79	32.21
TOTAL	1.87	100.00	2.44	100.00

TABLE 35

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR BOTH MARRIEDS & UNMARRIEDS IN CONDITION ONE

Source	Var. Comp.	Married PCT	Var. Comp.	Unmarried PCT
Subject	0.09	4.10	0.31	13.19
Sits	0.27	12.28	0.21	5.08
Modes	0.57	25.69	0.53	22.66
Subject X Sits	0.23	10.13	0.22	9.53
Subject X Modes	0.17	7.61	0.29	12.43
Sits X Modes	0.19	8.63	0.13	5.60
Residual	0.70	31.56	0.74	31.50
TOTAL	2.22	100.00	2.36	100.00

TABLE 36

ESTIMATED VARIANCE COMPONENTS AND PERCENTAGES OF TOTAL VARIANCE FOR EACH COMPONENT OF REPORTED RESPONSES TO SITUATIONS FOR BOTH FRESHMEN & SOPHOMORES IN CONDITION ONE

Source	Var. Comp.	Fresh. PCT	Var. Comp.	Soph. PCT
Subject	0.23	10.00	0.10	4.42
Sits	0.22	9.40	0.10	4.45
Modes	0.54	23.22	0.62	28.13
Subject X Sits	0.23	10.12	0.24	11.04
Subject X Modes	0.20	8.61	0.24	11.00
Sits X Modes	0.15	6.61	0.22	10.00
Residual	0.74	32.03	0.68	30.97
TOTAL	2.31	100.00	2.20	100.00